INTRODUCTION TIME: 15 Min

- **ATTENTION: In the last unit you learned the six functions of Marine Aviation and how an understanding of each of them will enable the forecaster to better the customer.**

- **MOTIVATION: As the war-fighter learned that weather affects all aspects of the battle the need for METOC support increased. The MST is the means of bringing METOC support to the battlefield.**

- **REVIEW: Review the six functions of Marine Aviation.**

- **OVERVIEW: In this unit we will learn the history of the MST, the equipment used by the MST Marines, how to assemble the equipment to for a local area network(LAN) and you will use the equipment to produce METOC products.**

- **TRANSITION: Let’s start by taking a look at the history of the MST.**

Marine Air Ground Task Force (MAGTF)

- 1c. Relate the mission and roles of the Meteorological Support Team to the MAGTF and the Meteorological Mobile Facility (R)

History

- **The pre-Desert Shield/Storm focus of Marine Corps weather was directed towards the Aviation Combat Element (ACE) of the Marine Air/Ground Task Force (MAGTF)**
- **Post Desert Shield/Storm**
  - **Meteorological/oceanographic study commissioned by Marine Corps Combat Development Command (MCCDC)**
  - **Final report identified requirement to support all elements of the MAGTF (CE, GCE, ACE & FSSG)**

History

- **Growing pains**
  - **Real world operations and contingencies**
    - Somalia - Operation "Just Cause"
      - Exercised MST concept
      - Poorly planned and executed
    - Marine Expeditionary Unit (MEU) Support
      - Exercised MST concept
      - Mixed results

History

- **Operational training and exercises**
  - Korea - Ulchi Focus Lens (UFL)
    - Exercised MST concept
    - Scripted exercise, does not represent potential problems
  - MCAGCC 29 Palms - Combined Arms Exercise (CAX)
    - Exercised concept MST concept
    - Status quo - business as usual

Mission/Roles

- **Table of Organization (T/O)**
  - **One (1) Weather Service Officer - 6802 (WO)**
  - **Two (2) Weather Forecasters - 6842 (SSgt/GySgt)**
  - **Two (2) Weather Observers - 6821 (Cpl)**
  - **No technicians (6493) assigned**

Mission/Roles

- **Table of Equipment (T/E)**
  - **Interim Mobile Oceanography Support System (IMOSS)**
  - **Portable METOC subsystem (NITES IV)**

Mission/Roles

- **Capabilities and limitations**
  - **Unclassified /classified**
  - **NIPRNET/SIPRNET**
  - **Main module**
    - Primary workstation
    - Tactical Decision Aids (TDAs) software
    - Administrative/Briefing software
    - Local Area Network (LAN) capable
    - MetMF(R) interface

Mission/Roles

- **Communications module**
  - Radio Teletype (RT) broadcasts
  - Weather Facsimile (WEFAX) products
  - Local Area Network (LAN) capable
  - Receive only
  - Main module back-up

Mission/Roles

- **Satellite module**
  - NOAA reception only
  - No cryptographic equipment; therefore, no DMSP reception capability
  - Automatic Picture Transmission (APT)
  - Local Area Network (LAN) capable
  - Receive only
  - Main module back-up

Mission/Roles

- **Command requirements**
  - **Command Element (CE) - the Marine Expeditionary Force (MEF) headquarters requires forecasts of critical meteorological and oceanographic elements such as:**
    - Aviation flight conditions
    - Sea surf/swell conditions
    - Tidal/current data
    - Warnings/advisories of extreme/hazardous weather conditions
    - Weather conditions that will affect communications

Mission/Roles

- **Ground Combat Element (GCE) - Marine Corps doctrine stresses expeditionary (to include amphibious) operations and is maneuver warfare oriented**
  - The Ground Combat Element (GCE) requires a higher level of support
  - Requires support in the form of graphic products used for briefing the weather slice of the Intelligence Plan of the Battlefield (IPB)
  - Focus should be on the 24-48 hour range
  - Examples of required information is contained in Marine Corps Warfighting Publication 3-35.7

Mission/Roles

- **Aviation Combat Element (ACE) requires precise, current weather information for all aircraft operations**
  - Forecasts should focus out for up to 96 hours
  - Areas of interest should include at a minimum: home base, alternate airfields, destination airfields, refuel/tanker areas, Forward Arming and Refueling Points and target areas
  - Aviation specific parameters should include at a minimum: altimeter settings, ceiling heights, pressure/density altitudes, cloud bases/tops , temperatures, wind speeds/directions, icing and turbulence

Mission/Roles

- **Combat Service Support Element (CSSE) operations can be heavily influence by extreme weather conditions**
  - Meteorological extremes can have a significant effect on equipment and personnel
  - Areas of interest should focus on the material support to the Marine Air/Ground Task and the movement and support of equipment and personnel
  - CSSE specific parameters should include at a minimum: extreme hot and cold, heavy precipitation (liquid, freezing and frozen), and unfavorable sea states

Mission/Roles

- **Meteorological Mobile Facility (MetMF) verses MetMF Replacement (R)**
  - **Meteorological Mobile Facility**
    - Footprint consisted of 3-4 8 x 8 x 20 shelters (mobile facilities)
    - Required heavy lift to embark
    - Limited communications outside the MWSS area of responsibility
    - No NIPRNET/SIPRNET capability

Mission/Roles

- No secure communications
- No portable equipment/sensors
- Designed for ACE support only
- Resident in the MWSS only

Mission/Roles

- **Meteorological Mobile Facility (R)**
  - Footprint consists of one 8 x 8 x 20 shelter (mobile facility)
  - Lift requirement resides in all elements of the MAGTF
  - Designed to embark on KC-130 aircraft
  - NIPRNET/SIPRNET capable
  - Communications suite compatible with current MAGTF C4I structure
  - Equipped with remote sensors

Mission/Roles

- Can be utilized as the data distribution center for MST operations
- Full reach-back capability

Mission/Roles

- **Naval meteorology /oceanography communications architecture**
  - **Regional centers**
    - Provide primary meteorological products and service to designated areas of responsibility
    - Examples of support include: Joint METOC Viewer (JMV) queries. sea surface/swell data, numerical products

Mission/Roles

- **Facilities and detachments**
  - Facilities include Naval Air Stations and Weather Offices
  - Detachments include small, specialized detachments - NEXRAD detachment - Oklahoma, Climatology detachment - Asheville

- APPLICATION: Interspersed throughout the entire lesson
- EVALUATION: Written test at the end of the unit